International Council for the
Exploration of the Sea

F
C.M.1976/H:1
Administrative Report

DEMERSAL FISH (NORTHERN) COMMITTEE

by R. Jones

1975

Belgium

(P. Hovart)

The determination of the density and the composition of juvenile soles, plaice, dab, flounders and gadoids along the Belgian coast has been continued on the R.V. "Hinders".

In addition, two cruises were carried out for the demersal young fish survey in collaboration with the Netherlands and Germany.

Work on Fish

Market sampling was continued covering several species and areas: Cod - North Sea; Whiting - North Sea; Plaice - North Sea, English Cahnnel, Bristol Channel, Irish Sea; Sole - North Sea, English Channel, Bristol Channel; Haddock - North Sea.

Species	Season	No. of Samples		No. of Samples	
		Research Vessel	Market	Measured	Aged
Sole IV	1	-	11	1 401	210
	2	-	12	1 416	210
	3	-	12	1 522	210
	4	-	12	1 440	210
VIIf	1	-	14	1 759	200
	2	-	3	210	210
	3	-	6	581	200
	4	-	4	502	210
VIIa	1	-	8	1 190	210
	2	-	11	1 348	210
	3	-	3	414	70
	4	-	12	1 475	210
VIId, e	1-4	-	10	1 142	349
Plaice IV	1	-	12	855	150
	2	-	12	808	150
	3	-	12	827	150
	4	-	12	743	150
VIIf	1-4	-	20	1 043	390
VIIa	1-4	-	20	1 186	380
VIId, e	1-4	-	9	563	160

continued...

Species	Season	No. of Samples		No. of Samples	
		Research Vessel	Market	Measured	Aged
Cod IV	1	-	8	432	312
	2	-	7	313	313
	3	-	9	385	385
	4	-	8	226	226
Whiting	1	-	7	268	200
	2	-	7	190	190
	3	-	8	160	160
	4	-	7	120	120
Haddock	1-4	-	10	882	-

Denmark

(H.Knudsen)

RV "Dana" took part in the Young Fish Survey in the North Sea in February and in the International Young Gadoid Survey in June.

Species	Season	No. of Samples		No. of Samples	
		Research Vessel	Market	Measured	Aged
Cod North Sea IV	1	42	-	6 659	349
	2	-	-	967	400
	3	-	-	1 266	432
	4	-	-	517	86
Kattegat IIIa	1	-	3	-	152
	2	-	1	-	39
	3	-	2	-	107
	4	-	1	-	45
Haddock North Sea IV	1	31	54	2 861	436
	2	-	16	63	48
	3	-	32	91	73
	4	-	33	115	115
Skagerak-Kattegat IIIa	1	-	46	490	330
	2	-	2	40	24
	3	-	7	72	69
	4	-	27	120	120
Whiting North Sea IV	1	42	92	9 553	875
	2	-	37	194	177
	3	-	96	583	516
	4	-	56	562	549

continued..

Species	Season	No. of Samples		No. of Samples	
		Research Vessel	Market	Measured	Aged
Skagerak-Kattegat IIIa	1	-	61	1 916	1 339
	2	-	8	67	67
	3	-	29	1 251	1 190
	4	-	54	1 424	1 422
Norway Pout North Sea IV	1	4	31	5 590	3 935
	2	-	6	636	242
	3	-	5	435	433
	4	-	27	4 776	4 776
Plaice North Sea IV	1	-	2	-	440
	2	-	2	-	408
	3	-	1	-	201
	4	-	1	-	184
Kattegat IIIa	1	-	6	-	490
	2	-	4	-	258
	3	-	4	-	321
	4	-	1	-	90
Sole North Sea IV	2	-	-	1 572	643

Canada

(A.W. May)

A fuller report on research by Canada in 1975 on demersal fish species is contained in the Canadian Research Report to the Annual Meeting of ICNAF, June 1976.

In 1975, new assessments were provided for American plaice in ICNAF subdivision 3Ps, Greenland halibut in subarea 2 and Divisions 3KL and greysole in Divisions 3NO. Previous assessment for the remaining American plaice and greysole stocks and for the cod, redfish, yellowtail and roundnose grenadier stocks in ICNAF subareas 2 and 3 were updated and total allowable catches for 1976 were calculated. As a result of these recommendations, international catch quotas for 1976 were agreed to by ICNAF for all stocks of demersal fish which support directed fisheries in ICNAF subareas 2 and 3. In some of the larger and more important stocks the 1976 total allowable catches were significantly lower than in 1975 to reduce fishing mortalities to the MSY level and to allow for rebuilding of some of these stocks. A new assessment was also completed for the Gulf of St Lawrence redfish stock indicating that the adult redfish biomass comprising mainly fish of the very successful 1956 and 1958 year classes declined substantially during 1972-75 to about 100 000 tons at the beginning of 1976, less than 25% of that present at the beginning of 1972. The next year class of consequence will not fully recruit to the fishery until about 1980. Thus, the adult biomass will remain low during the remainder of the 1970's.

To provide a data base for continued updating and revision of assessments of these demersal stocks, intensive research vessel surveys and commercial sampling of the various fisheries were conducted in 1975 with commercial sampling being further intensified.

Associated biological data were collected for all species. Information on distribution and relative abundance of roundnose, roughhead and common grenadiers from research vessel surveys during 1958-73 indicated that largest catches of roundnose grenadier were obtained in deep water on the continental slope in ICNAF Divisions 3K, 2J and off the northern third of Labrador, whereas roughhead grenadiers were most abundant along the eastern edge of the Grand Banks, although catches were smaller than for roundnose grenadiers. Catches of common grenadiers were small in all areas. Comparative day-night fishing for redfish in subdivisions 3Ps revealed consistent substantial differences in mean numbers and weights of redfish caught per standard day and night set. Also, fish of intermediate ages (8 to 14 years) exhibited proportionately greater movement off bottom during the night. Preliminary analyses of morphological data on the Sebastes fasciatus-mentella species complex indicate that more than 95% of the specimens could be assigned to the two types on the basis of four morphological characters. Also all specimens could be distinguished from the swimbladder musculature. Incidence of these three species of larval nematodes in redfish is under investigation with the aim of further delineating the stock interrelationships of redfish in the Canadian Atlantic area. Studies on the age and growth of greysole indicated that those from northerly localities grow faster and have a shorter life span than those from the south and as a result the northern fish mature at an earlier age. A study of the food of yellowtail indicated that polychaetes and amphipods were the main components while American plaice select more fish and echinoderms.

Research was conducted on all groundfish stocks of major commercial importance in the Maritimes region of Canada (ICNAF subarea 4) in support of the ICNAF catch quota management programme. In addition, the historical relationship between catches and fishing effort for the groundfish resources of the Scotian Shelf was reviewed as background information against which to evaluate proposals for the regulation of groundfish fishing effort.

Advances were made in analysis of population changes in silver hake stocks through modal analysis of length frequency compositions of monthly commercial catches; age compositions of catches were determined which differed substantially from those obtained by current otolith reading techniques. These revised age estimates allowed construction of population models which provide consistent explanations of events observed in the fishery. Acquisition of ageing data (from otoliths) for Scotian Shelf redfish stocks also provided substantial new insights into recent fishery events. New information on catches of small cod on the eastern Scotian Shelf both in the directed fishery and as bycatch allowed this previously unquantifiable source of mortality to be incorporated into stock analysis.

The field activities associated with a ten year study of groundfish egg and larval abundance in the southern Gulf of St Lawrence were greatly reduced as the project moved to the data analysis and hypotheses testing stages. Quantitative bottom trawl surveys for juvenile and adult abundance estimates were continued both in the Gulf of St Lawrence and on the Scotian Shelf. A unique data set, comprising a time series of abundance estimates for egg, larval, juvenile and adult stages of southern Gulf of St Lawrence cod and concurrent environmental fluctuations, has allowed the construction of a population simulation giving insights into population responses to changes in stock abundance and environmental conditions, including the factors controlling recruitment.

A variety of parasitological investigations were conducted on gadoids, flatfish and skates. Of partcular importance was an investgiation of a protozoan swim bladder parasite of haddock to establish whether this organism is a significant cause of haddock mortality.

Finland

(R. Parmanne)

No work concerning demersal fish has been carried out in the area covered by the Committee.

France

(G. Lefranc)

Travail en mer

Faisant suite aux campagnes de 1973 et 1974, une étude des fonds chalutables du nord-est Atlantique a été menée du 9 avril au 4 juin 1975 par le N.O. "Thalassa"; c'est ainsi qu'ont été prospecté le Banc Hatton, le Banc Rockall et le seuil Islando-Faerigien. Un inventaire de la faune ichthyologique et l'étude des principales espèces commerciales (lingue bleue, sébaste) ou commercialisables (macroures), en ont été les objectifs principaux.

Au cours de campagnes organisées le long du littoral français entre Dunkerque et le Havre, de nombreuses informations biologiques ont été recueillis sur les différentes espèces de gadidés, pleuronectidés et soléidés que l'on peut rencontrer dans le sud de la Mer du Nord et en Manche orientale.

Travail du laboratoire

La mise en place d'une nouvelle méthode d'échantillonnage basée sur l'analyse des catégories commerciales nous permet de connaître dorénavant les compositions en tailles et en âges des apports de morue, de merlan et de lieu noir débarqués à Boulogne-sur-Mer en provenance des principaux lieux de pêche de la Mer du Nord. De son côté, le laboratoire de Lorient, grâce à un échantillonnage régulier des captures est à même de fournir des informations identiques sur l'âge et la taille du merlan de la Mer d'Irlande (VIIa); les différents paramètres de croissance linéaire et pondérale étant recueillis à bord des navires de recherche ou sur le marché.

Une étude à la fois biologique et statistique de la plie et de la sole pêchées en Manche orientale a débuté cette année; notre effort portera surtout sur la détermination des paramètres indispensables à une analyse dynamique des stocks.

Echantillonnage

Région	Saison 1975	Nb. d'échantillons		Nombre de poissons mesurés	Nombre otolithes prélevés
		Bâteau de recherche	Marché		
Morue					
Va	II	8	-	76	43
Vb	II	4	-	104	80
Merlan					
IVc	I	-	-	725	-
VIIa	I	-	3	423	150
VIIa	II	-	4	714	130
VIIa	III	-	4	702	50
VIIa	IV	-	3	612	163
VIId	I	-	-	1 599	-

continué....

Région	Saison	Nb.d'échantillons		Nombre de poissons mesurés	Nombre otolithes prélevés
		Bâteau de recherche	Marché		
Eglefin					
IVa	II	6	-	879	-
Vb	II	3	-	706	-
VIb	II	12	-	22 447	-
Lieu Noir					
IVa	II	6	-	31	31
Vb	II	5	-	447	256
Lingue Fr.					
IVa	II	5	-	20	-
VIb	II	9	-	80	-
Lingue Bleue					
Va	II	7	-	163	-
Vb	II	9	-	130	-
VIb	II	35	-	414	-
Sébaste					
Va	II	8	-	2 903	-
Vb	II	10	-	542	-
VIb	II	4	-	47	-
Plie					
IVc	II	-	-	579	-
IVc	III	-	-	432	-
IVc	IV	-	-	66	15
VIId	III	7	-	107	107
VIId	IV	5	-	35	35
VIId	IV	-	7	169	169
VIIf	IV	-	2	540	-
VIIg	IV	-	1	77	-
Sole					
IVc	II	-	-	537	-
IVc	III	-	-	82	-
VIId	III	7	-	82	82
VIId	IV	6	-	36	36
Merlu					
VI	I	-	1	207	-
VI	III	-	2	184	-
VI	IV	-	8	788	-
VII	I	-	8	795	-
VII	II	-	18	2 910	-
VII	III	-	18	2 377	-
VII	IV	75	15	2 372 (Bâteau de recherche) 1 797 (Marché)	1 630

Echantillonnage pour diverses espèces du Secteur VII

Espèces	Nombre d'échantillons	Nombre de poissons mesurés
Melanogrammus aeglefinus	9	205
Trisopterus minutus minutus	1	172
Molva molva	5	33
Lepidorhombus whiffiagonis	15	160

Observations effectuées au cours du 4ème trimestre (novembre)par la Thalassa.

German Democratic Republic

(L. Danke & P. Ernst)

Sampling

Area	Season	No. of Samples			No. of Fish		
		Research Vessel	Commercial Vessel	Market Samples	Measured	Aged	Racial Investigation
Cod							
IVa	II	2	-	-	180	180	-
IIb	IV	27	-	-	5 940	1 837	-
IIb	III	-	4	-	413	290	-
IIa	III	-	2	-	569	100	-
Redfish[1)]							
IIa	I	6	-	-	298	298	-
	II	12	-	-	1 452	1 032	-
	III	-	1	-	192	192	-
	IV	20	-	-	6 463	-	-
IIb	III	-	1	-	256	200	-
Greenland Halibut							
XIV	II	-	13	-	1 197	181	-
IIa	IV	5	-	-	660	660	-
IIb	IV	10	-	-	1 571	1 070	-
Saithe							
IIa	I	33	-	-	4 466	2 304	-
	III	-	13	-	8 166	200	-
	IV	-	18	-	9 431	100	-
	IV	45	-	-	13 592	2 902	-
IVa	I	31	-	-	2 746	1 536	-
	II	2	-	-	674	300	-
	II	-	-	18	3 960	1 953	-
	III	-	-	4	437	437	-
Haddock							
IVa	III	2	-	-	866	-	-
	I	1	-	-	227	-	-
IIb	IV	1	-	-	-	100	-
IIa	I	1	-	-	243	-	-

continued...

Area	Season	No. of Samples			No.of Fish	
		Research Vessel	Commercial Vessel	Market Samples	Measured	Aged
Whiting						
IVa	III	4	-	-	341	-
	IV	1	-	-	291	-
Greater Silver Smelt						
Vb_1	IV	1	-	-	273	-
IVa	III	2	-	-	623	-
Lesser Silver Smelt						
IIa	IV	1	-	-	136	-

1) Sebastes marinus and S. mentella.

Other Investigations

Samples of organs of saithe were taken for biochemical investigations.

Tagging

Tagging experiments were not carried out in 1975.

Research Vessel Surveys

Area	Dates	Objectives
Northern North Sea	15 - 25 Jan. 13 - 18 Feb.	Saithe, haddock
West Coast of Norway (Röst to Svinøy)	28 Jan. to 12 Feb.	Saithe, redfish, haddock
Kopytov	20 May to 12 Jun.	Redfish, cod
Northern North Sea	15 Jun. to 1 Jul.	0-group, gadiformes, adult saithe, haddock, whiting
West Coast of Norway (Halten to Fugløy)	5 - 17 Oct.	Saithe, redfish, cod
Bear Island	18 - 24 Oct.	Greenland halibut, redfish, cod, haddock
West Spitzbergen	3 - 9 Nov.	Cod
Bear Island	9 - 13 Nov.	Greenland halibut, redfish
West Coast of Norway (Fugløy to Halten)	14 - 20 Nov.	Saithe, redfish
East Faroe Island	22 Nov to 6 Dec.	Silver smelt

Federal Republic of Germany

(G. Rauck)

Continuation of the biological studies at sea on board research vessels and fish markets with length measurements, collection of otoliths, maturity data, stomach contents and single weights of fish.

Research trips

January : North Sea
February : North Sea
March : Norway Coast
April : Baltic Sea
June : North Sea
July : North Sea
August : North Sea
September : North Sea
October : Baltic, North Sea
December : North Sea

Species Area	Season	Research Vessel Samples				Market Samples		
		No. of Samples	No. of Fish			No. of Samples	No. of Fish	
			Measured	Aged	Racial Invest.		Measured	Aged
Norway pout								
IVb	3	13	562					
Poor cod								
IVb	4	3	145					
IVc	4	4	225					
Whiting pout								
IVb	4	2	32					
IVc	4	4	244	189				
Sole								
IVb	1	2	2			8	98	46
	2	122	3519	1404				
	3	5	10			6	255	255
	4	4	200			11	606	501
IVc	2	2	57	57		11	606	501

Species Area	Season	Research Vessel Samples				Market Samples		
		No. of Samples	No. of Fish			No. of Samples	No. of Fish	
			Measured	Aged	Racial Invest.		Measured	Aged
Redfish								
I and IIb	3	85	6383	2702				
IIa	1	20	1700	630				
	2					2	434	--
	4					1	233	--
						3	694	--
Va	1					7	1703	
	2					11	2507	103
	3					17	3786	1250
	4					10	2301	100
Vb	1					1	209	
	2					5	1004	102
	3					1	324	100
	4					5	1175	200
XIV	1					2	602	98
	2					2	517	208
	3	35	2524	1811				
	4					8	2109	300
Whiting								
IIId	4	1	7					
IVa	1	36	4395					
	3	19	3577					
IVb	1	43	5614			11	95	
	2	24	22			7	88	
	3	32	2806			16	155	
	4	44	2536			1	2	
Vb	1	4	863					
	3		19					
VIa	3	9	1149					

Species Area	Season	Research Vessel Samples				Market Samples		
		No. of Samples	No. of Fish		Racial Invest.	No. of Samples	No. of Fish	
			Measured	Aged			Measured	Aged
Saithe								
I+								
II	1					3	1162	677
	2					4	1660	805
	4					3	1411	961
IIa	1	2	674	666				
IVa	1					1	363	363
	2					2	472	472
	3					5	1383	1141
	4					1	327	327
Va	1					4	1322	618
	2					7	2239	1942
	3					11	3687	1622
	4					14	5333	2055
Vb	2					2	778	400
	3					1	310	310
	4					4	1199	796

Species Area	Season	Research Vessel Samples				Market Samples		
			No. of Fish				No. of Fish	
		No. of Samples	Measured	Aged	Racial Invest.	No. of Samples	Measured	Aged
Haddock					Weighted			
I	1	1	172	172				
	2	33	19762	674				
	3	8	1370	498				
IIa	1	9	1263	635	187	5	1569	677
	2	1	1259					
IIb	3	7	484	447				
IVa	1	41	13342	1445				
	3	6	397					
IVb	1	27	4657	351				
	3	12	4150	125				
	4	47	592	164				
Va	1					1	372	137
	2					3	1252	393
Vb	3	35	2146					
VIa	3	66	17575	1266				
VIIb/c	3	2	109					
VIIg,h, i,k	3	1	34					

Species / Area	Season	Research Vessel Samples				Market Samples		
			No. of Fish				No. of Fish	
		No. of Samples	Measured	Aged	Racial Invest.	No. of Samples	Measured	Aged
Cod								
I	1	7	883	434				
	2	33	36694	631				
	3	30	5780		600			
IIa	1	1	146	100	146	4	1214	657
	2	1	1014					
IIb	1	5	760	390	124			
	2	15	21197	683				
	3	25	3279	1188	375			
IVa	1	7	315					
	3	32	559	239				
IVb	1	40	6793	2738		2	401	
	2	24	73			12	547	
	3	26	457	371		10	1040	
	4	59	4429	2664		3	366	
IVc	1	3	366					
	4	3	71	61				
Va	1					2	516	260
	2					2	566	286
Vb	3	32	2375	1446				
VIa	3	7	200					
XIV	1					3	1093	473
	2					2	869	318
	3	33	2259	587				

Species Area	Season	Research Vessel Samples				Market Samples		
			No. of Fish				No. of Fish	
		No. of Samples	Measured	Aged	Racial Invest.	No. of Samples	Measured	Aged
Plaice								
IVa	4	1	18					
IVb	1	4	186			6	1869	1097
	2	26	540			64	4179	52
	3	1	547			19	391	
	4	91	757			25	2038	399
IVc	1	5	539	358				
	4	1	54	54				
Dab								
IVb	1					1	67	
	2	26	417			36	188	
	3					56	593	
	4	16	455			71	2210	
Flounder								
IVb	2	24	15					
	4	2	20					
Turbot								
IVb	1					8	588	597
	2	2	297			3	206	370
	3					6	456	451
	4					11	743	632
IVc	2	3	20					

Iceland

(J. Magnusson)

The standard collection of data on landed demersal fish, mainly cod, haddock and redfish, was carried out in various ports as in previous years. The research vessels "Bjarni Sæmundsson" and "Hafbór" were mostly engaged in work on demersal species throughout the year. All but two trips which were made to East-Greenland waters with the research vessel "Bjarni Sæmundsson" were directed to the waters around Iceland.

The investigations on the distribution of mature cod just before and during the spawning period was carried out along the same lines as in 1974 and 1973.

The investigations on the abundance, composition and feeding of the immature population of cod on the nursery grounds was intensified.

The research programme for haddock was similar to that for cod. The special study on the immature stock of redfish, implemented in 1974, was continued in 1975 and partly extended to the East-Greenland waters. The pelagic trawling for redfish continued, but only on a small scale.

As to other demersal species, the investigations were carried out in similar ways as in previous years.

Of special interest was the deep sea trawling carried out off the SE- and SW coasts of Iceland, although so far the results were of negligible economic importance. Investigations on blue ling, silver smelt and grenadier were added to the regular programme. The number of fish sampled is shown in the following tables.

Sampling Cod

Area	Season	No. of Samples		No. of fish[x)]		
		Research vessels	Market samples	Tagged	Measured	Aged
Iceland	Jan.-March	110	49	804	12.117	3485
"	Ap.-June	105	56	1030	16.383	2721
"	July-Sept.	118	12	114	13.895	678
"	Oct.-Dec.	78	28	-	16.119	1262
E-Green-land	Jan.-March	-	-	-	-	-
	Ap.-June	65	2	836	4.735	900
	July-Sept.	-	-	-	-	-
	Oct.-Dec.	2	-	39	462	74

x) tagged fish included.

Sampling Redfish

Area	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
			S. marinus		
V a	Jan. - March	32	2	5389	
"	Apr. - June	27		1679	
"	Jul. - Sept.	115	2	11009	571
"	Oct. - Dec.	74	2	12178	99
XIV	Apr. - Jun.	74	2	9011	719
"	Jul. - Sept.	45	2	7105	200
"	Oct. - Dec.	4		477	
	Total	371	10	46848	1589
			S. mentella		
V a	Jan.- March	6		241	
"	Apr.- Jun.	11		401	
"	Jul.-Sept.	47	1	3290	
"	Oct.-Dec.	16		872	100
XIV	Apr.-Jun.	34	2	4250	100
"	Jul.-Sept.	28	2	3223	182
	Total	142	5	12277	382
			S. vivipparus		
V a	Jan.-March	2		24	
"	Apr.-Jun.	9		303	
"	Jul.-Sep.	46		2687	
"	Oct.-Dec.	28		2804	100
XIV	Apr.-Jun.	5		34	
"	Jul.-Sept.	6		29	
	Total	96		5881	100
Grand total		609	15	65006	2071

Sampling Haddock

Area	Season	No. of samples		No. of fish		
		Research vessels	Market samples	Tagged x)	Measured	Aged
Iceland	Jan.-March	76	17	189	15.521	2068
"	Ap.-June	108	5	778	12.778	945
"	July-Sept.	83	4	-	10.520	627
"	Oct.-Dec.	78	10	103	16.358	1176
E-Green-land	Jan.-March	-	-	-	-	-
"	Ap.-June	5			47	-
"	July-Sept.	-	-	-	-	-
"	Oct.-Dec.	-	-	-	-	-
Sampling Saithe						
Iceland	Jan.-March	22	3	-	549	340
"	Ap.-June	35	11	-	2.648	522
"	July-Sept.	21	6	-	1.536	339
"	Oct.-Dec.	30	4	-	1.092	139

Sampling Catfish

Area	Year	Tagged	No. of fish Measured x)	Aged
Iceland (Va)	1975	1790	1868	1601
E-Greenl. (XIV)	1975	100	931	0
Total		1890	2799	1601

x) tagged fish included.

Sampling Plaice

Area	Season	No. of fish		
		Tagged	Measured x)	Aged
Va	Jan. - Mar.	1236	1236	595
"	Apr. - Jun.			197
"	Jul. - Sep.	1500	2447	951
"	Oct. - Dec.		1082	575
	Total	2736	4765	2318

Sampling Greenland Halibut

Area	Season	Tagged	No. of fish Measured x)	Aged
Va	Jan. - Mar.	-	-	104
"	Aprl - Sep.	2570	3707	432
"	Oct. - Dec.	472	3397	200
	Total	3042	7104	736

x) tagged fish included.

Sampling Silver Smelt

Area	Year	No. of fish	
		Measured	Aged
Iceland Va	1975	4.136	2.087
E-Greenland XIV	1975	25	68
Total		4.161	2.155

Sampling Blue Ling

Area	Year	No. of fish	
		Measured	Aged
Iceland Va	1975	859	755
E-Greenland XIV	1975	46	107
Total		905	862

Sampling Rock Grenadier

Area	Year	No. of fish	
		Measured	Aged
Iceland Va	1975	2.323	1.093
E-Greenland XIV	1975		
Total		2.323	1.093

Ireland

(J.P. Hillis)

Cod

Port sampling was carried out in VIa during all seasons; in VIIa commercial sampling during the spring and summer was supplemented by data from a research vessel using commercial type gear in the autumn. A short research vessel cruise was undertaken in October to study mean length and distribution in age groups 0 and 1.

Haddock

Port sampling of the commercial catch in VIa was carried out during all season, supplemented in October by a small scale study of small haddock destined for fish meal. A short sampling project was also undertaken in VIIg-k during July.

Whiting

Small scale sampling was undertaken during the summer in VIIa and VIIg-k.

Plaice

Small scale port sampling was undertaken in VIa, VIIa and VIIg-k. In addition, a programme of beam trawl 0-group surveys was commenced in late October, off the east coast of Ireland, north of Dublin (VIIa).

Sole

Port sampling was carried out in VIa, VIIb,c and VIIg-k during the early part of the year.

Sampling Data

Species	ICES Sub-Area	Quarter	Source*	Numbers L(cm)	Age
Cod	VIa	1	C	670	209
		2	C	359	138
		3	C	41	41
		4	C	177	67
	VIIa	2	C	535	93
		3	C,R	491	154
		4	R	402	218
		Total.....		2,675	920
Haddock	VIa	1	C	1,055	422
		2	C	1,364	235
		3	C	127	62
		4	C	370	279
	VIIg-k	3	C	119	78
		Total.....		3,035	1,076
Whiting	VIIa	3	C	337	83
	VIIg-k	3	C	340	107
		Total.....		677	190
Plaice	VIa	2	C	126	126
		3	C	36	36
		4	C	286	286
	VIIa	3	C,R	245	245
	VIIg-k	3	C	242	242
		Total.....		935	935
Sole	VIa	2	C	147	147
	VII,b,c	2	C	304	304
	VII-g-k	1	C	508	508
		Total.....		959	959

* C Commercial R Research

Netherlands

(J. F. de Veen)

Work at Sea

The RV "Tridens" made 26 cruises in the Committee's area of which 9 were mainly devoted to work within the scope of the Demersal Fish (Northern) Committee. The corresponding numbers of cruises by the RV "Willem Beukelsz" were 29 and 9.

The RV "Stern" and the RV "Schollevaar" made together 19 cruises devoted to demersal topics in the Netherlands estuaries.

The RV "Stern", RV "Tridens", RV "Willem Beukelsz" and RV "Schollevaar" made two joint cruises (in April and October) to analyse the stocks of juvenile sole, plaice, dab, flounder, gadoids, brown shrimp and other species in the nurseries of Belgium, Holland, Germany and part of Denmark in cooperation with Belgian and German research vessels.

Work on Fish

Plaice

The stock analysis by means of market sampling was continued. Analysis of the catches from young fish cruises in the southern and central North Sea continental coasts showed that the 1974 year class is poor and the 1975 year class is above average to good.

Sole

The stock analysis by means of market sampling from different localities in the North Sea and the Irish Sea was continued.

One cruise was devoted to the Irish Sea for census purposes.

An analysis of the catches of undersized sole in the Belgian, Dutch and German coastal areas revealed that the 1974 and 1975 year classes are below average to poor.

The 1973 year class estimated in the pre-recruit surveys as of above average strength turned out to be good when recruiting in the second half of 1975.

The following numbers of fish per species have been tagged :

Species	Adults	Juveniles
Sole	3 400	420
Plaice	4 000	470
Flounder	-	84

Cod

The analysis of market samples was computerised and information relating to market categories was used, before raising samples to total catches. This improved the results significantly in comparison with former years when the catch of large cod tended to be overestimated. Work on consumption and production was discontinued after it had been completed.

Cod, Haddock and Whiting

The RV "Tridens" participated in the International Young Fish Surveys in February for estimating the abundance of 1-year old gadoids and again in June for estimating gadoid 0-group abundance during their pelagic phase. Discarding of cod and whiting was studied on board beam trawlers during the first half of the year.

1975 Sampling data for Plaice

Area	Season	No. of samples for age determination only		Number of fish		
		research vessel	market	measured	aged	racial investigations
IIIa	2nd quarter	1	-	-	62	62
IVa	1st quarter	-	-	-	-	-
	2nd "	-	-	-	-	-
	3rd "	-	1	55	70	70
	4th "	-	-	44	-	-
IVb	1st quarter	-	84	3 360	5 880	5 880
	2nd "	10	8	770	1 110	560
	3rd "	-	7	1 050	490	490
	4th "	10	8	1 680	1 181	560
IV c	1st quarter	-	27	1 820	1 890	1 890
	2nd "	8	4	1 190	696	280
	3rd "	-	3	1 260	210	210
	4th "	6	8	210	311	560
Dutch Waddensea	2nd quarter	11	-	-	318	-
	4th "	6	-	-	202	-
Zeeland estuary	2nd quarter	4	-	-	208	-
	4th "	8	-	-	264	-
Total annually		64	150	11 439	12 892	10 562

1975 Sampling data for Sole

Area	Season	No. of samples for age determination only		Number of fish		
		research vessel	market	measured	aged	racial investigations
IV b	1st quarter	-	10	-	500	500
	2nd "	9	69	-	3 525	3 450
	3rd "	-	8	-	400	400
	4th "	10	6	-	642	300
IV c	1st quarter	-	5	-	250	250
	2nd "	7	55	-	2 851	2 750
	3rd "	-	4	-	200	200
	4th "	6	5	-	428	250
VII a	1st quarter	-	-	-	-	-
	2nd "	8	11	-	928	550
	3rd "	-	-	-	-	-
	4th "	-	2	-	100	100
VIII Gulf of Biskaje	3rd quarter	-	5	-	250	250
	4th "	-	1	-	50	50
Dutch Waddensea	2nd quarter	10	-	-	135	-
	4th "	4	-	-	58	-
Zeeland estuary	2nd quarter	1	-	-	18	-
	4th "	7	-	-	118	-
Total annually		62	181	-	10 453	9 050

1975 Sampling data for cod

Area	Season	No. of samples for age determination only		Number of fish		
		research vessel	market	measured	aged	racial investigations
IV	1st quarter	21	8	2 600	985	-
	2nd "	-	9	1 975	425	-
	3rd "	-	8	1 835	410	-
	4th "	-	6	1 977	310	-
Total annually		21	31	8 387	2 130	-

1975 Sampling data for Saithe

Area	Season	No. of samples for age determination only		Number of fish		
		research vessel	market	measured	aged	racial investigations
IV	1st quarter	2	6	940	513	-
	2nd "	-	3	355	185	-
	3rd "	-	2	300	90	-
	4th "	-	3	388	145	-
Total annually		2	14	1 983	933	-

1975 Sampling data for whiting

Area	Season	No. of samples for age determination only		Number of fish		
		research vessel	market	measured	aged	racial investigations
IV	1st quarter	17	6	2 340	724	-
	2nd "	-	7	2 100	350	-
	3rd "	-	6	2 730	300	-
	4th "	-	7	2 238	350	-
Total annually		17	26	9 408	1 724	-

1975 Sampling data for haddock

Area	Season	No. of samples for age determination only		Number of fish		
		research vessel	market	measured	aged	racial investigations
IV	1st quarter	13	3	1 100	410	-
	2nd "	-	4	1 200	210	-
	3rd "	-	5	1 420	250	-
	4th "	-	5	1 329	250	-
Total annually		13	17	5 049	1 120	-

Norway

(O.M. Smedstad)

Sub-areas I and II

The major roundfish species were sampled on a greater scale than in 1974. These data form the basis for the stock assessment programmes of Arcto-Norwegian cod and haddock, saithe and Greenland halibut. They are used to provide forecasts for the Norwegian fisheries and to make assessments at ICES Working Groups.

In February-March the concentrations of mature Arcto-Norwegian cod were charted three times in London. At the end of the spawning season mature cod were tagged in the same area.

The distribution and abundance of young cod and haddock were studied with research vessels in the southern parts of the Barents Sea in February-March and along the Finmark coast in May. However, the investigations were hampered by very windy weather. In August, the concentrations of cod in the area Bear Island - West Spitsbergen were studied and in August-September the annual International 0-Group Survey was carried out in the Barents Sea and adjacent waters.

Tagging experiments of the major roundfish species continued. In January and in June-July young saithe were tagged in the southern parts of Division IIa. In July-August cod, haddock and saithe were tagged in the coastal waters of northern Norway.

The abundance of 0-group saithe in the littoral zone was studied at selected localities along the Norwegian coast in September-October.

Sub-area IV

The landings of Recommendation 4 species from Division IVa and the southern parts of Division IIa were sampled on a greater scale than in the previous years. The sampling programme gives data for age determinations and the relative abundance of the different species in the landings.

The distribution and abundance of the I and II-group of the major species were studied in February. In April, the distribution of fish larvae was charted. On a cruise in June the distribution and abundance of Recoommendation 4 species was studied and in November-December the influx of 0-group blue whiting was investigated.

Young saithe were tagged in June-July along the coast of Norway.

Norwegian sampling in the areas where industrial trawl fisheries take place

Species Area	Season	Research vessel				Market		
		No. of Samples	No. of fish			No. of Samples	No. of fish	
			Aged	Measured	Tagged		Aged	Measured
Cod								
IVa	1	17	-	23	-	-	-	-
	4	13	-	3	-	-	-	-
IVb	1	27	-	123	-	-	-	-
Haddock								
IVa	1	17	-	1 628	-	71	-	2 338
	2	-	-	-	-	62	-	524
	4	13	-	125	-	56	-	318
IVb	1	27	-	1 106	-	-		-
Whiting								
IVa	1	17	-	721	-	71	-	665
	2	-	-	-	-	62	-	147
	4	13	50	115	-	56	-	38
IVb	1	27	-	2 559	-	-		-
Norway pout								
IIa	1	-	-	-	-	13	-	1 085
	3	-	-	-	-	11	-	212
	4	-	-	-	-	10	-	450
IVa	1	17	-	1 452	-	71	-	8 006
	2	-	-	-	-	62	-	5 648
	3	-	-	-	-	21	-	2 002
	4	13	92	525	-	56	-	5 888
Blue Whiting								
IIa	2	-	-	-	-	18	-	1 513
	3	-	-	-	-	11	-	671
	4	-	-	-	-	10	-	405
IVa	1	17	-	140	-	71	-	2 527
	2	-	-	-	-	62	-	1 703
	3	-	-	-	-	21	-	225
	4	13	55	1 164	-	56	-	2 532

Norwegian sampling in the areas where industrial trawl fisheries take place

Species Area	Season	Research vessel				Market		
		No. of Samples	No. of fish			No. of Samples	No. of fish	
			Aged	Measured	Tagged		Aged	Measured
Silver Smelt								
IIa	1	-	-	-	-	13	-	394
	2	-	-	-	-	18	-	152
	3	-	-	-	-	11	-	250
	4	-	-	-	-	10	-	250
IVa	1	-	-	-	-	71	-	1 094
	2	-	-	-	-	62	-	633
	3	-	-	-	-	21	-	16
	4	13	-	169	-	56	-	389
Sandeel								
IVa	1	-	-	-	-	2	-	174
	2	2	-	224	-	-	-	-

Species Ares	Season	Research vessel				Market		
		No. of Samples	No. of fish			No. of Samples	No. of fish	
			Aged	Measured	Tagged		Aged	Measured
Cod								
I	1	15	843	1 737	299	-	-	-
	2	6	958	1 301	-	60	2 442	16 103
	3	5	-	805	253	-	-	-
	4	1	-	181	-	12	995	2 659
IIa	1	35	1 061	8 050	2 800	163	3 698	10 364
	2	-	-	-	-	13	567	1 337
	3	2	117	-	253	1	117	57
	4	1	-	1	-	6	214	956
IIb	3	4	434	865	-	-	-	-
IVa	3	-	-		-	1	-	19
Haddock								
I	1	-	-	-	-	-	-	-
	2	7	138	681	-	12	848	2 840
	3	10	433	757	-	-	-	-
	4	3	90	102	124	7	366	1 361
IIa	1	-	-	-	-	-	-	-
	2	1	139	-	-	1	-	44
	3	4	205	-	675	1	-	89
	4	-	-	-	-	6	238	1 023
IIb	3	1	-	7	-	-	-	-
IVa	3	-	-	-	-	1	-	11
Saithe								
I	2	-	-	-	-	-	518	1 511
	3	-	-	-	1 000	-	300	-
	4	-	-	-	-	-	-	527
IIa	1	-	71	-	37	-	1 128	5 302
	2	-	-	-	2 098	-	835	1 604
	3	-	-	-	998	-	730	3 004
IVa	1	-	40	-	-	-	120	154
	3	-	-	-	1 797	-	181	92
Vb	1	-	110	-	-	-	-	-
Greenland Halibut								
IIa	2	41	-	3 354	-	-	-	-
	4	3	-	514	-	-	-	-
IIb	3	2	-	376	-	-	-	-
	4	10	-	2 452	-	-	-	-

Poland

(W. Cieglewicz & J. Janusz)

Polish research vessels did not conduct any investigations in the NEAFC Area in 1975. All samples were taken on board commercial trawlers.

Sampling data for Cod, Haddock, Saithe, Whiting and Blue Whiting

Area	Season	Type of Fish	No. of Samples		No. of Fish		
			Research Vessel	Market	Measured	Aged	Examined racially
Cod	2nd	-	-	8	10 329	200	-
IIb	2nd	-	-	35	52 691	2 003	-
Haddock	1st	-	-	1	1 158	100	-
	2nd	-	-	7	2 641	703	-
IVa	3rd	-	-	13	3 887	1 292	-
	4th	-	-	5	1 690	500	-
Saithe	1st	-	-	3	3 111	302	-
	2nd	-	-	14	-	1 403	-
IVa	3rd	-	-	28	9 078	2 805	-
	4th	-	-	2	2 684	200	-
Whiting	1st	-	-	1	423	-	-
	2nd	-	-	2	1 657	200	-
IVa	3rd	-	-	6	2 516	697	-
	4th	-	-	2	1 823	200	-
Blue Whiting							
VI	2nd	-	-	5	960	500	-

Portugal

(M.L. Dias)

No demersal fish work has been carried out in the area for which the Committee is responsible.

Spain

(O. Cendrero)

Les travaux espangols sur les poissons de fond de la région nord du CIEM pendant 1975 n'ont été que la prise de données statistiques sur les captures de quelques espèces, notamment la morue et l'églefin, par les bateaux nationaux qu'y pêchent.

Sweden

(G. Otterlind)

No sampling or other activity to be reported has been performed outside the Baltic (c.f. Baltic Fish Committee).

United Kingdom

1. England and Wales

(A.C. Burd)

Sampling

COD

Area	No. of samples		No. of fish		
	Research Vessels	Market Samples	Measured	Aged	Racial Invest
Arctic 101+102+113		156	47068	2043	
Iceland 111		284	74307	3193	
Greenland 114		1	364	26	
Kattegat/Skagerrak 103A		1	170	40	
Faroe 105		117	17726	1141	
North Sea 104		753	108296	5433	
Westerly 106A		60	9663	802	
Irish Sea 107A		131	20059	2118	
Bristol Channel 107F		-	-	34	
S.E.Ireland 107G		3	460	63	
W. English Channel 107E		3	185	-	
(FREEZER) Arctic 101+102+113		64	26213	-	

HADDOCK

Area	No. of samples		No. of fish		
	Research Vessels	Market Samples	Measured	Aged	Racial Invest
Arctic 101+102+113		140	33322	1224	
Iceland 111		169	35307	862	
Faroe 105		79	15667	44	
Kattegat/Skagerrak 103A		3	776	-	
North Sea 104		423	58000	843	
Westerly 106A		36	6740	790	
Irish Sea 107A		34	4881	306	
Bristol Channel 107F		5	683	-	
S.E. Ireland 107G		3	466	-	
W. of Ireland 107B		1	193	-	
(FREEZER) Arctic 101+102+113		17	2107	-	

Sampling (contd)

SAITHE

Area	No. of samples		No. of fish		
	Research Vessels	Market Samples	Measured	Aged	Racial Invest
Arctic 101+102+113		41	6367	602	
Iceland 111		54	6250	1221	
Faroe 105		28	2641	488	
North Sea 104		55	6254	624	
Westerly 106A		65	6699	482	
Irish Sea 107A		1	67	-	
(FREEZER) Arctic 101+102+113		1	23	-	

PLAICE

Area	No. of samples		No. of fish		
	Research Vessels	Market Samples	Measured	Aged	Racial Invest
Arctic 101+102+113		23	6809	-	
Iceland 111		1	151	-	
North Sea 104		426	82642	3667	
Irish Sea 107A		193	115243	2103	
Bristol Channel 107F		5	1246	120	
S.E. Ireland 107G		7	1729	62	
E. English Channel 107D		30	2040	-	
W. English Channel 107E		151	13963	895	

WHITING

Area	No. of samples		No. of fish		
	Research Vessels	Market Samples	Measured	Aged	Racial Invest
Faroe 105		1	48	-	
North Sea 104		394	34106	1024	
Irish Sea 107A		106	14747	1368	
Bristol Channel 107F		5	567	75	
S.E. Ireland 107G		3	385	75	
Skagerrak/Kattegat 103A		1	46	-	
W. English Channel 107E		117	11935	585	

Sampling (contd)

SOLE

Area		No. of samples		No. of fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest
North Sea	104		167	21391	558	
Irish Sea	107A		96	15220	602	
Bristol Channel	107F		5	1414	108	
S.E. Ireland	107G		2	508	-	
E. English Channel	107D		48	2057	124	
W. English Channel	107E		130	14715	348	

TURBOT

Area		No. of samples		No. of fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest
North Sea	104		103	5313	-	

HAKE

Area		No. of samples		No. of fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest
North Sea	104		10	1471		
Westerly	106A		40	8672		
Irish Sea	107A		73	12000		
Bristol Channel	107F		4	1203		
S.E. Ireland	107G		5	1023		

Sampling (contd)

SPURDOG

Area		No. of samples		No. of fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Invest
North Sea	104		110	8470	-	
Westerly	106A		51	4966	-	

SKATES AND RAYS

Area		No. of samples		No. of fish		
		Research	Market	Measured	Aged	
Westerly	106A		21	1982	-	
Irish Sea	107A		107	15661	-	
Bristol Channel	107F		11	1780	-	
S.E. Ireland	107G		5	823	-	
North Sea	104		13	522	-	

Research vessel surveys

Area	Month	Objectives
Region 1		
Faroes	June	0-group survey
North-West Atlantic	July	Genetic composition of cod stocks
Barents Sea	Aug/Sep	0-group survey
Region 2		
North Sea	January	Plaice tagging
Irish and Celtic Seas	February	Nursery ground surveys
N.E. Coast England	March	Cod tagging
Irish and Celtic Seas	April	Nursery ground surveys
North Sea	June	0-group surveys
Irish Sea	June	Egg and larval survey
North Sea	December	Plaice tagging
E & NE Coast England	Jan, Feb, April, June, August, Sep, Oct, Nov/Dec.	Inshore groundfish surveys

Tagging Releases

Release of English Tagged Fish in ICES Areas during 1975

Region / Species	104B	104C	107D	Total
Plaice	85	1033	1226	2344
Sole	10	203	618	831
Lemon Sole	137	-	51	188
Rays	-	-	252	252
Cod	2726	520	-	3246
Haddock	1234	-	-	1234
Whiting	797	-	-	797
Bass	2	-	-	2
Total	4991	1756	2147	8894

2. Scotland

(R. Jones)

Scottish research vessels conducted pre-recruit surveys at Faroe, from May-June and a combined North Sea and Scottish west coast survey in November/December. A vessel also participated in the International Young Fish Survey in the North Sea in February/March. 0-group gadoids were sampled pelagically in the North Sea in June/July.

Routine monitoring of the abundance and composition of the major roundfish and flatfish species was continued as in previous years, the data being obtained by sampling at the principal Scottish trawl and seine net ports.

At the request of ICES discarding by commercial fishing vessels was investigated. Nineteen trips were undertaken, 17 aboard seine net vessels and two aboard trawlers.

Norway pout data collected on routine research vessel cruises were analysed to provide an index of abundance. Landings of Norway pout and sandeels for industrial purposes were sampled at the major ports to determine the age composition of these species in the landings and to monitor the by-catch.

Tagging of the major round- and flat-fish species has continued with emphasis on tagging in offshore North Sea waters.

Aquarium studies have continued on the efficiency of conversion of food into growth and reproduction in gadoids.

The numbers of fish measured and aged in 1975 are shown in the following table.

Numbers of fish measured and aged in 1975

	Cod		Haddock		Whiting		Saithe		Hake		T esmarkii		Sandeel		Plaice		Lemon Sole		Megrim	
	Meas	Aged	Meas	Aged	Meas	Aged	Meas	Aged	Meas	Aged	Meas	Aged	Meas	Aged	Meas	Aged	Meas	Aged	Meas	Aged
North Sea																				
1)	51394	14027	149030	16605	101629	15699	20082	7360	-	-	10107	1165	2573	513	57829	12456	50880	8663	12273	3165
2)	971	300	37652	837	13698	1454	150	100	-	-	-	-	76	52	283	-	211	-	-	-
West Coast																				
1)	11177	3621	40785	8744	42482	7469	9256	2784	7753	2146	1502	541	-	-	18571	2475	9390	1164	4902	1885
2)	96	96	4846	556	4844	736	38	38	103	-	14083	727	-	-	-	-	102	-	148	-
Faroe																				
1)	9805	-	23363	4870	6418	2025	5708	3075	-	-	-	-	-	-	7214	3456	18895	3056	-	-
2)	1836	-	26730	1630	2095	1017	1519	-	-	-	-	-	-	-	136	-	2688	-	31	-
Iceland																				
1)	2899	-	7128	2086	230	104	80	64												
2)	-	-	-	-	-	-	-	-												
White Sea																				
1)	2329	-	2918	1607	-	-	-	-												
2)	-	-	-	-	-	-	-	-												

1) Market Sampling Data

2) Research Vessel Data

U.S.A.

(B.E. Brown)

The research work by the United States in the subject area covered by the Demersal Fish (Northern) Committee has been submitted to ICNAF.

U.S.S.R.

(P.A. Moiseev)

In 1975 research activities in the North Sea were directed at studies of the abundance and the state of the gadoid stocks.

In spring 1975 a trawling survey was undertaken for the determination of the abundance of various gadoid year classes, their distribution and the age structure of the stocks. Further biological data on haddock, whiting, saithe, cod, poutassou and Norway pout in the North Sea was collected. Ecological surveys were conducted for investgatingthe effects of environmental factors on haddock year class abundance. In June-July a survey was carried out to estimate the 0-group gadoids.

In 1976 a similar programme will be pursued. The data collected in 1975 is summarised below :

Species	Measurements (sp)	Age reading (sp)	Biological Analysis (sp)	External tagging
Haddock	15 840	2 684	2 839	1 172
Saithe	26 800	2 300	5 730	242
Whiting	41 200	2 034	3 200	355
Cod	854	854	-	-
Poutassou	17 200	500	700	-
Norway Pout	29 853	3 540	1 050	-

In 1975, as in previous years, research vessel data to determine the abundance, age length composition and distribution of cod, haddock, polar cod, saithe, redfish, Greenland halibut and other bottom fishes in the ICES area were collected. Results are shown in the following tables. No racial investigations were carried out.

Further work to assess the state of stocks of main commercial fishes were continued. Conditions of the survival of the young at different stages of development were studied. Ichthyoplankton was collected and analysed. Fishery forecasts were compiled and methods of fishery forecasting were improved.

Sampling Cod

Area	Season	No. of Samples	No. of Fish	
			Measured	Aged
Southern Barents Sea	I	33	118 913	9 889
	II	26	109 341	7 935
	III	23	122 346	6 612
	IV	12	50 922	3 212
North-western Barents Sea	I	4	5 829	433
	II	14	66 561	4 013
	III	3	10 754	800
	IV	9	33 405	2 804
North-western Coast of Norway	I	-	-	-
	II	4	1 284	933
	III	-	-	-
	IV	-	428	-
Sampling Haddock				
Southern Barents Sea	I	22	11 723	2 568
	II	5	13 830	1 500
	III	7	11 412	2 027
	IV	8	14 312	2 183
North-western Barents Sea	I	-	51	-
	II	7	2 929	1 653
	III	1	353	118
	IV	2	3 201	601
North-western Coast of Norway	I	-	-	-
	II	3	1 032	767
	III	-	-	-
	IV	-	593	-
Sampling Saithe				
Southern Barents Sea	I	-	44	-
	II	1	157	105
	III	-	10	-
	IV	-	2	-
Northwestern Barents Sea	II	-	21	-
	IV	-	1	-
Northwestern Coast of Norway	II	2	1 446	230
	IV	1	259	119
Sampling Redfish				
Southern Barents Sea	I	12	16 346	-
	II	1	4 861	300
	III	1	7 041	270
	IV	-	3 259	-

Continued...

Sampling Redfish

Area	Season	No. of Samples	No. of Fish	
			Measured	Aged
Northwestern Barents Sea	I	1	3 650	-
	II	9	45 703	1 500
	III	10	9 984	604
	IV	6	29 843	-
NW Coast of Norway	II	5	7 490	-
	IV	-	345	-
East Greenland	II	-	1 669	-
Sampling Greenland Halibut				
Southern Barents Sea	I	1	671	12
	II	-	302	-
	III	-	185	-
	IV	-	180	-
Northwestern Barents Sea	I	-	79	-
	II	3	1 760	348
	III	-	4	-
	IV	4	11 347	1 200
NW Coast of Norway	II	-	10	-
East Greenland	II	2	9 767	400
Sampling Long Rough Dab				
Southern Barents Sea	I	2	5 365	-
	II	1	3 643	-
	III	2	7 350	-
Northwestern Barents Sea	II	-	3 114	-
	III	-	1 135	-
	IV	-	152	-
NW Coast of Norway	II	-	20	-
Sampling Flounder				
Southern Barents Sea	I	5	1 195	493
	II	4	484	359
	III	2	1 122	275
Sampling Catfish				
Southern Barents Sea	I	5	2 660	-
	II	-	1 467	-
	III	-	6 676	-
	IV	-	294	-

continued....

Sampling Catfish

Area	Season	No. of Samples	No. of Fish	
			Measured	Aged
Northwestern Barents Sea	I	2	167	-
	II	2	1 174	-
	III	-	2 476	-
	IV	-	1 132	-
NW Coast of Norway	I	-	11	-
	II	-	38	-
	III	-	2	-